

## WHAT IS CLAIMED IS:

1. A device to implant impurities into a semiconductor wafer, comprising:  
a beam gun to shoot ions at a semiconductor wafer;  
a pair of ion gauges;  
an ion gauge controller to supply power to, and obtain information corresponding to a number of ions from, one of the ion gauges, the ion gauge controller comprising:  
a pair of control inputs respectively associated with the pair of ion gauges, such that when a control signal is supplied to one of the control inputs, the ion gauge controller supplies power to, and obtains information corresponding to a number of ions from, the respectively associated ion gauge;  
a control output to produce the control signal when either of the ion gauges is activated; and  
a parameter output to selectively produce a parameter signal based on a recipe selection;  
a first delay circuit to connect the control output to one of the control inputs, after a delay, when the parameter output is on; and  
a second delay circuit to connect the control output to the other of the control inputs, after a delay, when the parameter output is off.
2. A device to implant impurities according to claim 1, wherein the control output is a beam line gas output.
3. A device to implant impurities according to claim 2, wherein the beam line gas output is connected to a beam line gas device, which is capped.
4. A device to implant impurities according to claim 1, further comprising a pair of relay circuits each connected between one of the delay circuits and one of the control inputs to connect the control output to one of the control inputs when a voltage signal is received from the delay circuit connected thereto.
5. A device to implant impurities according to claim 4, further comprising a hex buffer

connected between each delay circuit and the corresponding relay circuit.

6. A device to implant impurities according to claim 1, wherein  
an inverter is positioned between the parameter output and one of the delay circuits  
such that one of the delay circuits is turned on when the other delay circuit is turned off, and  
each delay circuit comprises:  
a resistor-capacitor combination to produce a constant time delay when the delay  
circuit is turned on; and  
a discharge transistor to discharge the resistor-capacitor combination when the  
delay circuit is turned off.

7. A device to implant impurities according to claim 1, wherein  
the first delay circuit comprises:  
a first charging transistor connected to the parameter output;  
a first resistor-capacitor combination to produce a constant time delay when the  
first charging transistor is turned on;  
a first discharging transistor to discharge the capacitor of the first resistor-  
capacitor combination when the first charging transistor is turned off; and  
a first inverter connected between the parameter output and the first discharging  
transistor, and  
the second delay circuit comprises:  
a second charging transistor;  
a second inverter connected between the parameter output and the second  
charging transistor;  
a second resistor-capacitor combination to produce a constant time delay when  
the charging transistor is turned on; and  
a second discharge transistor connected to the parameter output to discharge  
the capacitor of the second capacitor-resistor combination when the second charging transistor  
is turned off.

8. A device to implant impurities into a semiconductor wafer according to claim 1,  
wherein the device is an Axelis GSD platform implanter.

9. A device to implant impurities into a semiconductor wafer according to claim 1, wherein the first ion gauge is used for high resist outgassing implants and the second ion gauge is used for low resist outgassing implants.

10. A device to implant impurities into a semiconductor wafer, comprising:  
a base unit having a plurality of interfaces comprising an input to receive an implant recipe an unused output to control a recipe parameter not used in both a high resist outgassing implant and a low resist outgassing implant;  
an ion gauge controller provided in the base unit;  
a beam gun to shoot ions at a semiconductor wafer;  
first and second ion gauges; and  
a switch to selectively connect either the first or second ion gauge to the ion gauge controller, the switch being activated by a trigger connected to the unused interface of the base unit.

11. A method for a pair of ion gauges in a semiconductor wafer implantation device, the ion gauges being controlled through an ion gauge controller, the method comprising:  
connecting a first delay circuit to a first control input on the ion gauge controller, the first control input activating one of the ion gauges when an on signal is supplied thereto;  
connecting a second delay circuit to a second control input on the ion gauge controller, the second control input activating the other of the ion gauges when an on signal is supplied thereto;  
connecting the first and second delay circuits to a parameter output which produces a parameter signal based on a recipe selection;  
positioning an inverter between one of the delay circuits and the parameter output; and  
connecting a control output to each of the delay circuits such that the control output is switched between one of the control inputs, with a delay, depending on whether the parameter output is on or off.

12. A method for a pair of ion gauges in a semiconductor wafer implantation device according to claim 11, further comprising:

removing the first and second delay circuits; and  
connecting a jumper between the control output and one of the control inputs.